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# Women Safety with Android Application

Prof. Mahale K.I.,<sup>1</sup> Bhand Yogesh Balasaheb<sup>2</sup>, Waghmare Dnyaneshwar Devidas<sup>3</sup>,

Vikhe Nitin Bhivsan<sup>4</sup>, Karmare Pratiksha Santosh<sup>5</sup> <sup>1</sup>Assistant Professor, Electronics & Telecommunication Engineering <sup>2,3,4,5</sup> Student, Electronics & Telecommunication Engineering <sup>1,2,3,4,5</sup>Vidya Niketan College of Engineering, Bota

Abstract: The increasing number of crimes against women has underscored the urgent need for effective safety measures. This project presents a user-friendly Android application designed specifically to enhance women's safety in real-time. The application allows users to quickly send emergency alerts to pre-registered contacts along with their live location using GPS technology. Integrated features such as a panic button, voice command activation, and real-time tracking ensure quick response during distress. The app also includes functionalities like fake call simulation and safety tips to empower users with preventive tools. Developed using Android Studio and Firebase for real-time data handling, the application aims to provide a reliable, accessible, and secure digital safety solution for women, contributing towards a safer environment

Keywords: Women Safety, Android Application, GPS Tracking, Real-time Alerts, Emergency Response, Mobile Security, Firebase, Voice Activation, Location Sharing

## I. INTRODUCTION

In today's world, women's safety has become a significant concern due to the increasing instances of violence, harassment, and crimes targeting women. Despite numerous legal frameworks and public awareness initiatives, the need for reliable, real-time safety mechanisms is still pressing. Technology, especially mobile applications, can play a crucial role in bridging this gap by providing immediate assistance and communication during emergencies.

Smartphones are now widely accessible and have become an integral part of everyday life. Leveraging the capabilities of Android smartphones for women's safety is both practical and impactful. Android, being the most popular mobile operating system, offers a robust platform for developing cost-effective and efficient safety applications that can be used by a large population.

The proposed Android application is designed to assist women during emergencies by sending alert messages and their current location to trusted contacts. This real-time sharing of information ensures that help can reach the victim promptly. The application is equipped with a simple and intuitive user interface that enables quick action even under stressful situations.

One of the key features of the application is the panic button, which when pressed, sends a pre-set SOS message along with the user's GPS coordinates to emergency contacts. This feature can also be triggered via voice command or by shaking the phone, making it versatile and accessible without unlocking the device, especially in high-risk scenarios.

Another feature includes a fake call function which simulates an incoming call, giving the user an opportunity to escape from threatening environments. This can be particularly useful in situations where making a real call might not be possible. Additionally, the app provides safety tips, guidelines, and contact details of nearby police stations or emergency services.

The backend of the application is supported by Firebase, which ensures real-time data synchronization and cloud-based storage of user information. Firebase also supports push notifications and authentication, allowing a secure and reliable communication channel between the app and the user's emergency contacts.

This project aims not only to respond to threats but also to prevent them by promoting awareness and preparedness. By providing women with a digital tool that is always with them and easy to use, we contribute to their empowerment and confidence in moving freely and safely in public spaces.

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In summary, this women safety Android application combines advanced technology with practical design to offer a comprehensive security solution. It reflects how mobile technology can serve as a powerful ally in creating safer environments for women. With further development and collaboration with law enforcement and safety organizations, such applications can evolve into standard safety tools in every woman's daily life.

## PROBLEM STATEMENT

In recent years, the safety and security of women have become a growing concern worldwide, particularly in urban and semi-urban areas where incidents of harassment, abduction, assault, and violence are frequently reported. Despite the presence of laws and awareness campaigns, the lack of timely help and communication during emergencies continues to put women at risk. Traditional methods of seeking help—such as calling the police or informing family members—often become impractical in moments of panic or when a victim is under physical or emotional duress. The absence of a reliable, immediate, and discreet method for women to notify trusted contacts and authorities severely limits the effectiveness of existing safety measures. Moreover, many women hesitate to report minor incidents due to fear of social stigma or lack of evidence, which further encourages offenders and contributes to underreporting of crimes. While mobile technology has advanced significantly, there is still a shortage of safety-centric mobile applications that are specifically tailored for women and equipped with intelligent, user-friendly features that work effectively even in high-risk scenarios. Therefore, there is a critical need for a smart, accessible, and real-time digital solution that enables women to instantly communicate distress signals, share their live location, and access emergency resources. The development of an Android-based safety application addresses this pressing issue by providing women with a tool that combines technology and personal security, empowering them to act swiftly in dangerous situations and feel more secure in their daily lives.

## **OBJECTIVE**

- To develop a user-friendly Android application that enables women to send instant SOS alerts with real-time location to pre-selected emergency contacts during distress situations.
- To integrate features such as panic button activation, voice command, and phone shake detection to ensure quick and discreet emergency communication.
- To provide additional functionalities like fake call simulation, safety tips, and nearby emergency service locator to enhance user preparedness and prevention.
- To ensure secure and real-time data transmission using cloud services like Firebase for storing user information and alert history.
- To empower women with a technological solution that enhances their confidence, promotes self-security, and supports timely assistance in critical situations.

## **II. LITERATURE SURVEY**

# "Smartphone-Based Women Safety Application Using GPS and GSM Technology" by K. Patel and R. Desai (2019)

This study presents an Android application that uses GPS technology for real-time location tracking and GSM services to send emergency SMS alerts to trusted contacts. The focus is on providing immediate assistance during emergencies by sharing the user's exact location with family or friends. The paper emphasizes the importance of a fast communication system to reduce response time in critical situations. It also discusses the challenges of ensuring accuracy and reliability of GPS signals. This work laid the groundwork for combining location tracking with alert notifications in women safety apps, highlighting how technology can empower users to feel safer.

**"Women Safety Mobile Application with GPS and SMS Features" by S. Gupta and A. Kumar (2020)** This research highlights the development of a simple yet effective Android app designed to send SOS alerts along with GPS coordinates through SMS. The application aims to minimize the number of steps required to activate the alert, allowing users to quickly notify emergency contacts. The study stresses the significance of easy-to-use features like

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one-tap alerts and gesture controls to accommodate users in distress who may not have the time or ability to navigate complicated interfaces. It also examines how integrating SMS as a fallback method ensures functionality in areas with poor internet connectivity.

# "Design and Implementation of an Android-Based Safety Application for Women" by M. R. Ali and N. H. Khan (2021)

This paper focuses on enhancing women's safety by incorporating voice command activation into an Android safety app. It addresses scenarios where manual activation of alerts is difficult, such as when the user is in danger or unable to use their hands. The study shows that voice-activated SOS alerts can improve the speed and ease of calling for help. The app also includes automatic sending of live location to emergency contacts. This research adds a crucial accessibility feature, making the app more practical and reliable for real-life emergency situations.

"A Review on Women Safety Applications: Features and Challenges" by P. Sharma and T. Singh (2022) This review paper examines multiple existing women safety applications to analyze their features and limitations. It identifies common challenges such as dependency on continuous internet connectivity, which can limit app effectiveness in low-signal areas. The paper also discusses privacy concerns and stresses the importance of securing user data. To overcome these challenges, the authors recommend integrating SMS-based alert options and strong encryption techniques. This review provides a comprehensive understanding of what works well in women safety apps and what needs improvement.

# "Real-Time Tracking and Emergency Alert System for Women Safety Using IoT and Mobile Applications" by R. Kumar and S. Yadav (2023)

This study proposes an integrated IoT and mobile-based system that enables real-time tracking and instant emergency alerts for women's safety. It utilizes cloud technology for storing location data and managing alert notifications, ensuring reliability and scalability. The system works effectively even in low network conditions by using both internet and SMS services. The research demonstrates how combining IoT devices with mobile applications can create a more robust safety solution. This approach enhances the chances of timely help reaching women during emergencies and adds flexibility to safety mechanisms.

## III. PROPOSED SYSTEM



#### Fig.1 System Architecture

#### 1. System Overview

This section presents a simplified visual interpretation of the functional design of a women safety mobile application. The diagram outlines how the user interacts with the application and how various integrated features respond to those interactions. It serves as a roadmap to illustrate how different safety mechanisms are coordinated to deliver quick and effective responses in emergency situations.

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#### 2. Role of the User

The user, typically a woman seeking safety support, plays a crucial role as the central initiator of all system functions. Their interaction—whether it's activating a panic button or sharing their location—starts the system's response process. The system is designed to be easily accessible and responsive to ensure that even in distress, users can activate safety features swiftly.

#### 3. Core Operational System

At the heart of the design is the application's core processing system. This central unit handles inputs from the user, performs necessary processing, and triggers relevant outputs or responses. It ensures all features—from alerts to fake calls—are activated as required, working seamlessly to provide fast and reliable support during critical moments.

#### 4. Emergency Alert (SOS) Feature

A major highlight of the application is the SOS alert functionality. When triggered, it sends out an emergency message to the user's predefined contacts, often along with real-time GPS location. This feature is essential for alerting trusted individuals or authorities immediately when the user senses danger or is in a vulnerable situation.

#### 5. Sound Alarm (Scream) Feature

The scream function is an audio-based alert system. When activated, it emits a loud, attention-grabbing sound from the device. This noise can potentially scare off a threat and alert nearby people to the user's distress, providing an immediate line of defense without requiring direct confrontation.

#### 6. Simulated Call (Fake Caller)

To help users tactfully escape uncomfortable or threatening environments, the fake caller feature creates a mock incoming call. This simulated call can be used as a social signal or excuse, allowing the user to exit a risky situation under the pretense of being busy or contacted by someone important.

#### 7. Location Sharing (Where Are You)

The application also offers a "Where Are You" function, enabling users to share their exact location with trusted contacts. It is especially helpful in unfamiliar areas or when the user feels unsafe. This real-time location sharing enhances situational awareness for both the user and their guardians or emergency responders.



IV. RESULT

Fig 2: dashboard

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#### Fig 3: Emergacny alret

The developed application brings together a range of safety features designed to maximize both protection and ease of use for the user. At the heart of the system, the central processing module handles user commands efficiently, triggering key functionalities like the SOS emergency alert, loud alarm (Scream), simulated incoming calls (Fake Caller), and real-time location sharing (Where Are You). Each component functions effectively, offering rapid support or preventive measures in situations where the user may feel unsafe or threatened.

Evaluation and testing have confirmed that the application reacts swiftly to user interactions, delivering accurate alerts and precise location updates without delay. The overall system performance reflects strong reliability, paired with an intuitive and accessible user interface.

By integrating both proactive safety alerts and supportive passive tools, the application ensures well-rounded protection. It not only aids users in critical moments but also gives them the confidence to navigate uncertain environments. This solution proves to be a dependable companion for personal safety, offering peace of mind across a variety of real-life situations.

#### **V. FUTURE SCOPE**

The women safety Android application holds significant potential for future expansion and enhancement. As technology evolves and safety needs continue to grow, the system can be upgraded with advanced features to provide even greater protection and user convenience. One promising direction is the integration of Artificial Intelligence (AI) and Machine Learning (ML) to analyze user behavior and predict potentially unsafe situations before they occur. This predictive approach could help in offering preventive alerts rather than reactive ones.

Moreover, incorporating wearable device support such as smartwatches or fitness bands can offer seamless and discreet activation of safety features, especially in cases where accessing a phone may not be possible. The app could also benefit from integration with local law enforcement agencies, allowing emergency alerts to be sent directly to the nearest police station for faster intervention.

Multilingual support and voice-enabled commands can further improve accessibility for a wider audience, including users with disabilities. Another valuable addition could be a community alert system, where nearby users can be notified in real-time to assist in emergencies.

With the advancement of 5G and IoT technologies, real-time data sharing and ultra-fast responses can be enabled, ensuring minimal delay in communication during critical events. In conclusion, the application offers a strong foundation and has vast possibilities for future development, making it adaptable to various safety scenarios and emerging technologies.

#### VI. CONCLUSION

In today's world, where personal safety, especially for women, is a growing concern, this Android-based application serves as a crucial technological solution. The system has been carefully designed to provide rapid, accessible, and

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user-friendly safety features that can be activated in real-time emergencies. Features such as the SOS alert, scream function, fake caller, and location sharing work collectively to ensure the user receives immediate support or is able to deter potential threats effectively.

Throughout development and testing, the application demonstrated its capability to respond swiftly to user inputs, making it highly reliable in stressful or dangerous situations. The integration of multiple safety measures in one platform eliminates the need for separate tools, thus enhancing convenience and usability. Furthermore, the simple and intuitive interface ensures that users of all age groups and technical backgrounds can operate the application without difficulty.

By bridging the gap between user safety needs and technological solutions, this system plays a vital role in empowering individuals—particularly women—to feel more secure in their everyday lives. It not only acts as a protective tool during emergencies but also promotes a sense of confidence and independence. Overall, the project succeeds in its aim to create a reliable, efficient, and essential companion for women's safety in both public and private environments.

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